



California Regional Water Quality Control Board

Los Angeles Region



Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

Alan C. Lloyd, Ph.D.
Agency Secretary

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

Arnold Schwarzenegger
Governor

March 3, 2006

R. W. Lawhn
Reliant Energy
Environmental Director – West Region Operations
7251 Amigo Street, Suite 120
Las Vegas, NV 89119

COMMENTS TO PHASE II 316(B) PROPOSAL FOR INFORMATION COLLECTION AND IMPINGEMENT MORTALITY AND ENTRAINMENT CHARACTERIZATION STUDY SAMPLING PLAN FOR RELIANT ENERGY ORMOND GENERATING STATION, OXNARD, CA, NPDES PERMIT NO. CA0001198, CI-5619

Dear Mr. Lawhn:

Reference is made to the Phase II 316(b) Proposal for Information Collection (PIC) and Impingement Mortality and Entrainment (IM&E) Characterization Study Sampling Plan (Sampling Plan) submitted for Reliant Energy (Reliant) for its Ormond Generating Station (Ormond), dated October 14, 2005, and prepared by ENSR International.

The California Water Quality Control Board, Los Angeles Region (Regional Board) staff reviewed each proposal with respect to the requirements of the 316(b) Phase II rule as published on July 9, 2004 (69 FR 41576) and incorporated into the CFR at Parts 9, 122, 123, 124, and 125.

On January 23, 2006, Regional Board staff and the United States Environmental Protection Agency (USEPA) consultant, Tetra Tech, met with your staff and consultants and discussed our preliminary concerns with the subject documents. We have completed our review for the PIC and IM&E Sampling Plan. The following are our comments:

GENERAL COMMENTS

The Ormond Generating Station is subject to both IM&E reduction standards. The overall organization, readability, and thoroughness of this PIC, including all appendices, are not adequate.

Extensive revision and revised submittal is required.

California Environmental Protection Agency



Recycled Paper

Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

Throughout the PIC there are numerous redundancies, discussion of irrelevant information, unsupported assumptions and contradictory statements.

The basic sections required for a PIC are represented, but the content is not complete, or sufficiently developed, and is often not supported by data or proper literature citations.

In addition to several general comments, our review identified a number of specific concerns with the PIC as presented. We have listed these concerns and some suggestions for modification and augmentation of the proposed work below. For the sake of brevity, specific comments are included as bulleted lists.

Preferred Compliance Alternative: The discussion of restoration throughout the PIC implies an *a priori* preference for using restoration as a compliance option. The PIC should reflect an emphasis on thoroughly investigating and exhausting all technologically based and operational measures before restoration is brought up. At 69 FR 41609, USEPA notes:

Facilities that propose to use restoration measures must demonstrate to the [Regional Board] that they evaluated the use of design and construction technologies and operational measures and determined that the use of restoration measures is appropriate because meeting the applicable performance standards or requirements through the use of other technologies is less feasible, less cost-effective, or less environmentally desirable.

Reliant does not provide the basis for its stated preference and appears to have made a conclusion regarding compliance before completing required elements of the Comprehensive Demonstration Study (CDS). The preamble to the Phase II Rule, as quoted above, makes clear the preference for a technology or operational (excluding restoration) approach, either in whole or in part, to meet the performance standards. Restoration is intended to be used as a supplement to, or in some cases a replacement for, other approaches only when it is more feasible, more cost effective or more environmentally desirable.

Use of Historical Data: Throughout the PIC references are continuously made to "high quality" historical data that will be used to characterize IM&E, source water body communities and even velocity cap and cooling water intake structure (CWIS) reduction credits. These data are never discussed adequately in this PIC and Quality Assurance/Quality Control (QA/QC) procedures are not described in detail. These data and their relevance to Ormond, therefore, can not be evaluated at this time. Also, it appears that entrainment has either never been studied at this facility (page 4-2), or not since 1980 (the PIC states both). Therefore, there are no data to be used for entrainment compliance review.

Baseline Reductions: It appears that Reliant plans to use published data from laboratory and other studies (e.g., Huntington Beach) to estimate the reduction influence of their velocity cap and CWIS location on Impingement Mortality and Entrainment (IM&E). The PIC cites the

variability of field data as a reason to use "less variable" lab-based estimates of velocity cap performance (page 4-6). This is not appropriate. Differences in levels of variation should be the basis for needing field-based, site-specific studies, so that the actual reduction at this facility from the CWIS and the velocity cap can be determined. Scientifically valid estimates of impingement and entrainment are required by the CDS.

New Data: Reliant proposes to sample for one year for IM&E at the CWIS, but not in the source waterbody. This proposed sampling plan is inconsistent with:

- (i) sampling plans proposed by the other coastal power plants in the Los Angeles Region, and
- (ii) historical sampling performed by Reliant as part of its NPDES permit compliance requirements.

Further, Reliant's assertions that previous work on the Southern California Bight are sufficient to characterize the area in proximity of the Ormond plant, are not supported by any information in this PIC. New studies are not explained in a clear manner and described QA/QC procedures, while lengthy, do not contain adequate information on sampling, sorting, or taxonomic QA/QC procedures.

SPECIFIC COMMENTS

Section 1: Introduction

Page 1-2: The PIC states that in assessing compliance, the Rule allows for flexibility including "The ability to discount "unavoidable, episodic impingement or entrainment events" in the assessment of performance." In discussing other means of determining attainment of performance standards, the Phase II Rule states that; "The question whether a facility should be considered in compliance even during occurrences of unavoidable episodic impingement and entrainment events is left to the Director. At the Director's discretion, facilities that are generally in compliance, but that experience an unusual peak of impingement mortality and/or entrainment, may be considered to still be in compliance on the basis of past good performance. Moreover, the inclusion of a compliance determination alternative based on a Technology Installation and Operations Plan in the final Rule also addresses these episodic issues." (FR page 41619). While some facilities with the appropriate performance records may, at the discretion of the Director, be able to discount such impingement and entrainment events, this ability should not be assumed to apply to Ormond Generating Station.

Page 1-5: Reliant states that there are three deviations from baseline configuration that mitigate IM&E at Ormond. These are that the CWIS is fitted with a velocity cap, located offshore, and they are currently implementing restoration measures. Restoration measures should not be considered for baseline calculations. In order to claim a reduction in either impingement mortality or entrainment relative to calculation baseline based on the location of the CWIS and a velocity cap, the CDS will have to contain scientifically valid estimates of such reductions.

Section 2: Source Water Body Information

Page 2-2 to 2-5: The discussion on the zone of influence is confusing. The zone of influence is not described adequately and the figure (2-1) is shown at too large of a scale to evaluate this estimated zone of influence. It does not appear that any studies have been done to document the zone of influence and that the defined zone is based on assumptions.

Section 3: Technologies, Operational, and Restoration Measures

Page 3-1, 3-5: Contradictory statements about the CWIS location (i.e., 1,950 ft or 2,100 ft offshore) are made. These statements should be edited to be consistent.

Page 3-2 and 3-4: As discussed above, current restoration practices as mitigation for calculation baseline is not appropriate. Baseline estimates must be based on technological or operational IM&E impacts.

Table 3-1: This table contains a statement that the "Recent impingement data are completely relevant." It is unclear to which data this statement refers. Because no description has been given of QA/QC protocols or sampling design used to collect these data, statements regarding the relevance of these data are unfounded.

Section (3.2.2): This section cites a number of reduction estimates for velocity caps (80%, 90%) and offshore intakes (50%) that are unsubstantiated for this facility by citations or data. Again, the discussion of restoration is not appropriate for this section.

Page 3-5: The riverine discussion contains no literature citations and is not relevant to the location of the Ormond station.

Table 3-2: There is no basis to evaluate the relevance of these numbers or statements as they relate to reduction estimates at the Ormond Generating Station provided in the PIC.

Page 3-15 to 3-16: Restoration discussion states that the focus should be on the most effective improvement of "ecological function" rather than "strict restoration" of IM&E losses. Ecological function has never been measured by this facility nor do they describe any plans to complete studies of the functional impacts of the CWIS at Ormond. Further, what Reliant means with the phrases "strict restoration" and "functional role" is not clear. What functional role would Reliant plan to restore? The described restoration activities in the PIC are not consistent with the scientific definition of restoration in the Rule. The Rule intends, by use of the word "restoration", that facilities restore the communities they directly impact. Specifically, the final Rule authorizes the use of restoration measures that produce and result in increases of fish and shellfish in the facility's watershed. Examples provided in the Rule include direct stocking, improved habitat or stocking of a functionally similar species, which clearly are intended to protect the watershed's structural and functional integrity. The interpretation of the restoration compliance alternative included in this PIC should be re-evaluated before an actual restoration plan is developed. Additionally, the restoration plan must include "A demonstration to the Director that you have

evaluated the use of design and construction technologies and/or operational measures for your facility and an explanation of how you determined that restoration would be more feasible, cost-effective, or environmentally desirable...." Any proposed restoration alternative must include a demonstration that use of the restoration measure is better than reducing IM&E in the first place.

Page 3-16: No data is provided on the population status of the species Reliant has labeled as "not at risk" to IM&E or "ecologically important" to the ecosystem. Such statements should be well supported by data and/or literature citations.

Section 4: Historical Study Review

Historical data in this section are not discussed for their relevance to current conditions at Ormond nor are QA/QC criteria discussed.

Page 4-3: This discussion presents a bulleted list of assertions regarding IM&E rates as well as fish and shellfish communities that are subject to impingement or entrainment by Ormond. Several of these statements are unclear, unsupported by data or documentation, or contradict statements made in other areas of the PIC. The specific comments on these bulleted points are as follows:

- Reliant asserts that the more recently collected impingement data "fully address the goals of the IMECS as articulated in the Rule." The degree to which the more recently collected impingement data address the goals of the required impingement mortality and entrainment characterization study (IMECS) must be demonstrated in the CDS. However, it is not clear from the information provided in the PIC how these studies fully address the information required in the CDS. Further, it does not appear that entrainment data have ever been collected at Ormond.
- It is unclear how conditions at the Mandalay generating facility relate to those at Ormond and why conditions at the two facilities are compared in this section of the PIC.
- The PIC indicates that "no listed Threatened or Endangered species or other special status species have been affected by impingement." There are no data presented or literature cited to support this assertion.
- The following statement is made as part of this bulleted list: "The two most frequently impinged fish species, the queenfish and northern anchovy, are large for the species (i.e., more than a couple grams) indicating that they are adult and young of year." The intent and meaning of this statement are unclear.
- Reliant indicates that the Regional Board concurred with their conclusions in the 1983 316(b) demonstration "that the operation of the CWIS did not result in an Adverse Environmental Impact on the fisheries in the vicinity." No documentation is provided in

this PIC of Regional Board's concurrence with this conclusion. If such documentation exists, it should be included in Section 5.0, Agency Consultations.

Page 4-6: The PIC states that the spatial and temporal variability of natural populations would make taking ambient data "not productive". It is our view that the inherent variability of operations at each station and the environment makes the study of current ambient conditions and characterization of the spatial and temporal variability all the more important for making any scientific determination of baseline or compliance.

Page 4-6 to 4-8: The PIC should be clear and consistent with discussions of use of old data and new studies. The PIC alternates between discussing the need for additional data versus justification for reliance on old data. The intentions and work planned is not at all clear.

Table 4-1: The PIC should include citations of the exact sources of the historical data. Also, QA/QC procedures are not described. As such, it is impossible to evaluate these statements.

Section 5: Agency consultations

This section contains many statements that are not supported by additional information or literature citations. Reliant makes statements about the NPDES agency's and Regional Board's opinions but does not support those statements with evidence of such communication from either body.

The PIC also states that communications with various agencies "have indicated that there are no state- or federally-listed species in the vicinity of the CWIS and therefore no potential impacts to protected species." Such a statement should be supported by documentation.

Section 6: Proposed Compliance Approach

Page 6-1: The goal of the CDS should be to establish the real impact of the CWIS on local fish and shellfish populations and to determine what, if any, reductions in IM&E are created by the facility's CWIS location and velocity cap. Reliant's statement that they plan to use CDS to "bolster" their a priori conclusions, is not an appropriate scientific approach to determine the real influence of the CWIS or to conduct quality scientific studies.

Page 6-1: Again, the statement that historical data from a controlled laboratory or other studies would provide less variable results for them to base reductions is irrelevant to the issue of establishing the actual reduction at this facility. The fact that Reliant acknowledges that they will likely get results that are more variable than the results of the mentioned studies strongly demonstrates the need for site-specific studies to characterize the velocity cap and CWIS location influence (or lack of influence) on IM&E at this site. If the velocity cap is significantly reducing impingement (IM) losses from this CWIS, then site-specific, field-based research must demonstrate such reductions. If reductions cannot be shown, no such reduction in IM&E can be concluded or assumed for compliance.

Page 6-1 and 6-2: Under compliance alternative 2, 3 and 5 restoration is mentioned. Restoration is not a technology based method for meeting performance standards and should not be discussed here.

Section 6.1 page 6-2: This section seems premature. This PIC is far from complete. Having a CDS outline full of assumed results is not appropriate.

Section 7: Proposed Sampling Plan

Although the PIC has indicated that no data are available for use in characterizing the fish and shellfish in the vicinity of the CWIS, Reliant proposes "...not to perform sampling of ambient populations of ichthyoplankton or adults." It is unclear how Reliant will satisfy the requirement that the IM&E Characterization Study includes "taxonomic identifications of all life stages of fish, shellfish, and any species protected under Federal, State, or Tribal Law (including threatened or endangered species) that are in the vicinity of the cooling water intake structure(s) and are susceptible to impingement and entrainment" if no data on ambient populations are to be collected.

Page 7-1: Sampling done at "approximately monthly frequency" is not clear or defined enough. How many days between sampling events? What determines when an event will occur? Is there a maximum number of days between samples? All of these questions should be answered.

Section 7.1: It does not appear that diel variability is accounted for in the impingement sampling.

Section 7.1: What are the QA/QC protocols for all historical studies mentioned and current IM sampling? These are, again not described.

Section 7.2: "Reliant proposes to sample for entrainment at a one month frequency throughout the year." Because there are no entrainment data available and the populations of ichthyoplankton vary greatly both spatially and temporally, weekly or bi-weekly (when the plant is in operation) sampling would be more appropriate. The entrainment samples are also to be collected at sunrise and sunset to evaluate diel variation. Sunrise and sunset are ecologically similar times of the day. A more scientifically valid approach would be to collect samples every six hours over a 24-hour period. Additionally, it is stated that sub-sampling will be done with a plankton splitter. It is unclear how such sub-sampling will be accomplished or what the criterion for sub-sampling a sample might be. More information on the methods to be followed for both collecting and processing these samples is required in order to evaluate the suitability of this study plan.

Plans to identify all fish eggs and larvae are mentioned, but shellfish larvae are not. Enumeration and identification of all life stages of all fish and shellfish must be done.

Page 7-3: The PIC indicates that collecting ambient data on fish and shellfish communities is difficult due to expected spatial and temporal variations in the source waters. The Phase II Rule

requires characterization of potentially impinged and entrained fish and shellfish and simply stating that biological populations vary in time and space is not sufficient reason to forego sampling.

Appendix B

This appendix includes the same bulleted list presented in Section 4.2 and discussed above (see those comments).

This PIC is for Ormond Generating Station, yet discussions on Mandalay are included throughout this appendix without any reference as to how this information is relevant to Ormond. Each section should include only information relevant to Ormond generating station.

Entrainment has never been adequately characterized (page B-1)

Again, statements of the data being "of very high quality" are not appropriate. A thorough description of the QA/QC procedures is all that is needed (page B-1).

The discussion of "Pacific Ocean/Southern California Bight Species Composition" in Section 3.0 relies almost exclusively on information from the literature. Far too few citations are included in this discussion. Additionally, this discussion should focus on species present in the zone of hydrological influence and not the entire region.

Page B-2: The analysis in the first bullet is confusing. What was the analysis of?

Page B-2: The point of bullet 4 is not clear.

Page B-3 (also section 4.1 and 5): Entrainment rates have not been done at Ormond since the 1970's (although earlier sections of the PIC seemed to say it had never been sampled). Because the PIC gives no detail on how the data were obtained, QA/QC procedures, or the relevance to current conditions they can not be evaluated.

Section 3.1.1: This section should contain scientific citations to support these statements.

Section 3.1.1.2: Provide supporting citations for statements about data representativeness.

Section 3.1.1.3: This section on Mandalay should be made relevant to Ormond or removed.

Section 3.1.2: Discusses both ambient physical and biological conditions as well as several fish species in detail that are observed and/or expected to be impinged at Ormond or Mandalay. It is unclear which species are expected at which facility or what similarities may be present between the stations that would make similar fish expected at both. These descriptions contain no discussion of shellfish, nor do they contain sufficient literature citations. Overall, the purpose of these discussions is unclear as the listed habits of the species are not discussed in relation to potential for impact by operation of the CWISs.

Section 3.3: This section includes unsupported statements about impact or lack of impact. The PIC should only speak to what has been studied or results from the primary literature that support the claims made here.

Section 4.0: Discussions of historic data contain too few details and citations to evaluate their relevance to Ormond or the quality of the studies and resultant data. Further, the discussions are not particularly relevant to the goals of the IM&E characterization studies as defined by the Phase II Rule.

Section 5: Discussion of the studies mentioned in this section does not provide enough information for evaluation of the relevance or quality and therefore can not be evaluated as to their acceptability for use in estimating current IM&E rates for compliance alternatives. There are no sampling details described, no citations, and no QA/QC description. Many statements that may be accurate and well supported by the literature are made in this section as unsupported assumptions. All such statements should be supported with data and/or literature.

Section 5.3: There is no doubt that there is substantial literature on the fisheries of the Southern California Bight. The issue is, are there data that characterize the IM&E and source water body within the area of impact of the CWIS at Ormond to not require additional field study? Additionally, is any such data of high enough quality? There is too little information provided in this PIC to evaluate these issues.

Section 6.0: This section does not provide sufficient detail for evaluation.

Figures B-1 and B-2: Both figures are heavily influenced by one extreme data point.

Appendix D

The sample plans for IM are not adequately described for evaluation.

Page D-4, Section D.1.2: The PIC presents an equation used to estimate impingement. No citation is given for this equation and no discussion is included as to the validity of this equation for use in estimating impingement. Such a discussion should be included.

Page D-6: In reference to impingement rates Reliant states that "Diel and seasonal trends will be evaluated." The impingement sampling protocols call for the screens to be held stable for 24-hours and then rotated. This protocol does not collect data that will allow for evaluation of diel trends.

Section D.1.4, D.2.1, and D.2.2: The PIC contains redundant discussions of why historic IM&E data are appropriate for use. As before, no demonstration is made that such data are appropriate for use.

Page D-7, Section D.2.3: Reliant indicates that entrainment sampling will be done 4 times per day, whereas earlier sections stated that samples would be collected twice per day at dawn and dusk. Additionally, the following caveat regarding sampling is included; "If the sampling team

Mr. R.W. Lawhn
Reliant Energy
Ormond Generating Station

- 10 -

March 3, 2006

believes that a sample may have been affected by an unavoidable, episodic entrainment event, a second day or night sample may be collected within the next 1 to 4 days and analyzed for verification purposes." An unavoidable, episodic event and the criteria for determining whether such an event has occurred must be defined. Currently there are no data on entrainment at this facility with which to put any new samples into perspective. Thus, it is unclear how this protocol will be used.

Page D-8: The description of the sub-sampling protocols for the entrainment samples is insufficient to determine adequacy. Define "especially abundant".

No discussion of shellfish evaluations are included as required in the Rule.

Page D-9, Section D.3: The QA/QC section falls well short of an adequate QA/QC program and lacks several critical elements. For example: Field QA/QC procedures need much more detail; QA/QC for taxonomy (i.e., random organisms being checked) is not appropriate. A subset of samples should have all the organisms re-identified by a separate taxonomist; There is no discussion of sample sorting QA/QC.

If you have any questions, please contact David Hung at 213/576-6664 or Dr. Tony Rizk at 213/576-6756.

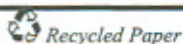
Sincerely,



Jonathan S. Bishop
Executive Officer

Cc: Mailing List

California Environmental Protection Agency



Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

MAILING LIST

U. S. Environmental Protection Agency, Region 9, Permit Branch (WTR-5)
Ms. Nancy Yoshikawa, U. S. Environmental Protection Agency, Region 9
Ms. Robyn Stuber, U. S. Environmental Protection Agency, Region 9
U.S. Army Corps of Engineers
Mr. Bib Hoffman, NOAA National Marine Fisheries Service
Department of Interior, U. S. Fish and Wildlife Service
Mr. Michael Lauffer, State Water Resources Control Board, Office of Chief Counsel
Mr. Jim Maughan, State Water Resources Control Board, Division of Water Quality
Mr. Dominic Gregorio, State Water Resources Control Board, Division of Water Quality
Mr. Marc S. Pryor, California Energy Commission
Mr. Rick York, California Energy Commission
Mr. Tom Luster, California Coastal Commission
Mr. William Paznokas, California Department of Fish & Game, Region 5
Mr. Guangyu Wang, Santa Monica Bay Restoration Commission
Department of Health Services, Sanitary Engineering Section
California State Parks and Recreation
South Coast Air Quality Management District
Water Replenishment District of Southern California
Los Angeles County, Department of Public Works, Waste Management Division
Los Angeles County, Department of Health Services
Mr. Mark Gold, Heal the Bay
Ms. Heather L. Hoecherl, Heal the Bay
Dr. Mark Gold, Heal the Bay
Mr. Dana Palmer, Santa Monica Baykeeper
Mr. David Beckman, Natural Resources Defense Council
Mr. Daniel Cooper, Lawyers for Clean Water
Environment Now
Mr. Tim Hemig, El Segundo Power LLC
Ms. Susan Damron, Los Angeles, Department of Water and Power
Mr. Steve Maghy, AES Southland LLC
Ms. Julie Babcock, Reliant Energy
Mr. Tim Havey, TetraTech
Mr. Shane Beck, MBC Applied Environmental Sciences
Mr. Scott Seipel, Shaw Environmental & Infrastructure, Inc.
Mr. John Steinbeck, Tenera Environmental